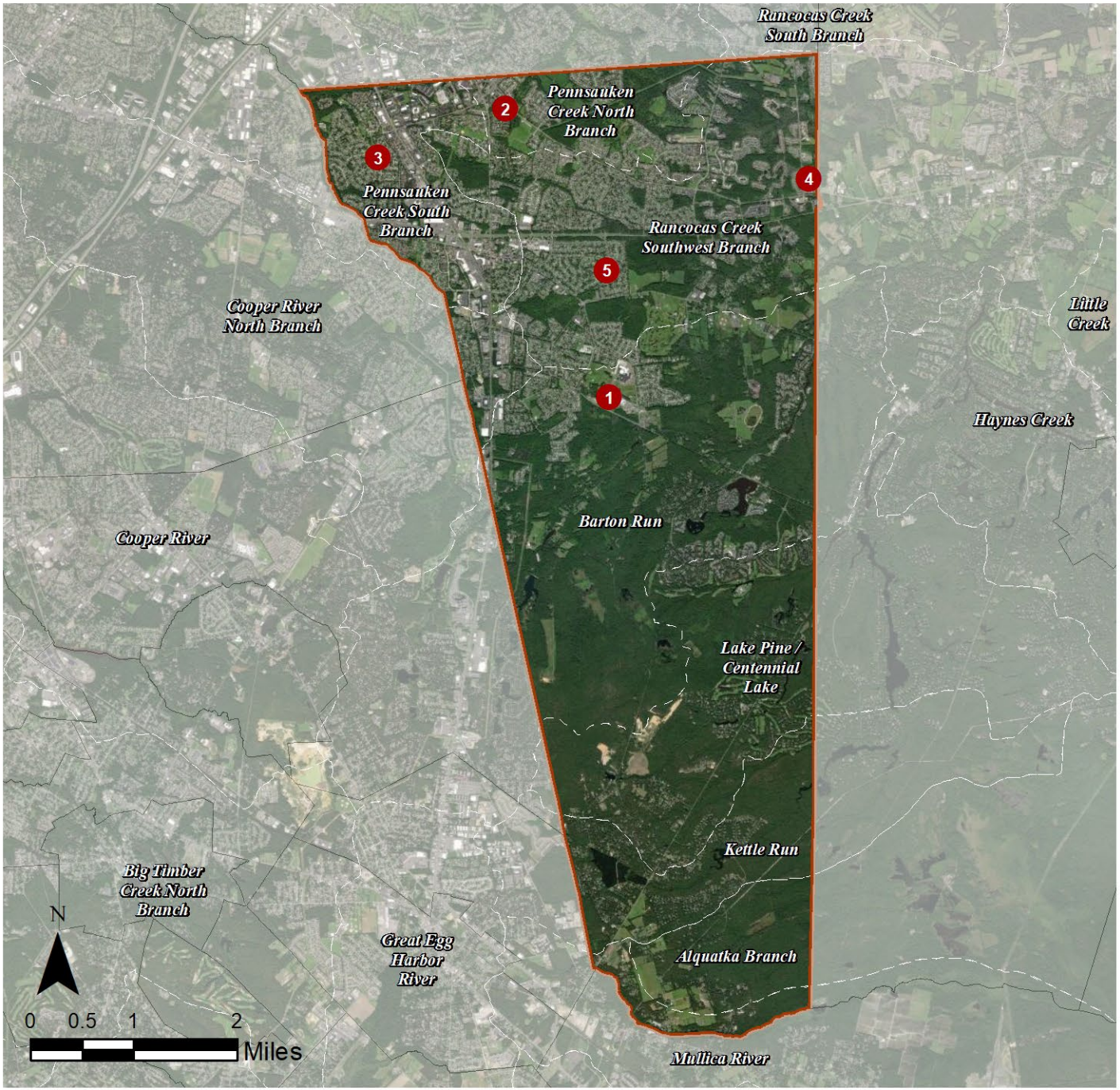
EVESHAM TOWNSHIP: GREEN INFRASTRUCTURE SITES



SITES WITHIN THE BARTON RUN SUBWATERSHED

1. Marlton Middle School

SITES WITHIN THE PENNSAUKEN CREEK NORTH BRANCH SUBWATERSHED

2. Congregation Beth Tikvah

SITES WITHIN THE PENNSAUKEN CREEK SOUTH BRANCH SUBWATERSHED

3. J. Harold Van Zant Elementary School

SITES WITHIN THE RANCOCAS CREEK SOUTHWEST BRANCH SUBWATERSHED

4. Evesham Township Public Works Department

5. Helen L. Beeler Elementary School

MARLTON MIDDLE SCHHOL

Subwatershed: Barton Run

Site Area: 1,358,705 sq. ft.

Address: 150 Tomlinson Mill Road
Marlton, NJ 08053

Block and Lot: Block 39, Lot 1.02

The basketball courts to the north of the building can be converted to pervious pavement to capture and infiltrate stormwater runoff from the surrounding paved areas. A rain garden can be installed in the turfgrass area on the west side of the building to capture, treat, and infiltrate stormwater runoff from the roof. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
27	366,960	17.7	185.3	1,684.8	0.286	10.06

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention system	0.117	20	8,770	0.33	1,125	$5,625
Pervious pavement	0.292	49	21,830	0.82	2,000	$50,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

Marlton Middle School

- bioretention system
- pervious pavement
- drainage area
- property line
- 2015 Aerial: NJOIT, OGIS

0 25' 50'

CONGREGATION BETH TIKVAH

Subwatershed: Pennsauken Creek North Branch

Site Area: 116,345 sq. ft.

Address: 115 Evesboro Medford Road
Marlton, NJ 08053

Block and Lot: Block 9, Lot 9

A rain garden can be installed on the northeast side of the building near two catch basins to intercept the stormwater runoff from the roof and driveway prior to reaching the drains to capture, treat, and infiltrate it. A preliminary soil assessment suggests that the soils have suitable drainage characteristics for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
49	57,220	2.8	28.9	262.7	0.045	1.57

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention system	0.070	12	5,250	0.20	675	$3,375

GREEN INFRASTRUCTURE RECOMMENDATIONS

Congregation Beth Tikvah

- bioretention system
- drainage area
- property line
- 2015 Aerial: NJOIT, OGIS

0 25' 50'

J. HAROLD VAN ZANT ELEMENTARY SCHOOL

Subwatershed: Pennsauken Creek South Branch

Site Area: 413,820 sq. ft.

Address: 270 Conestoga Drive
Marlton, NJ 08053

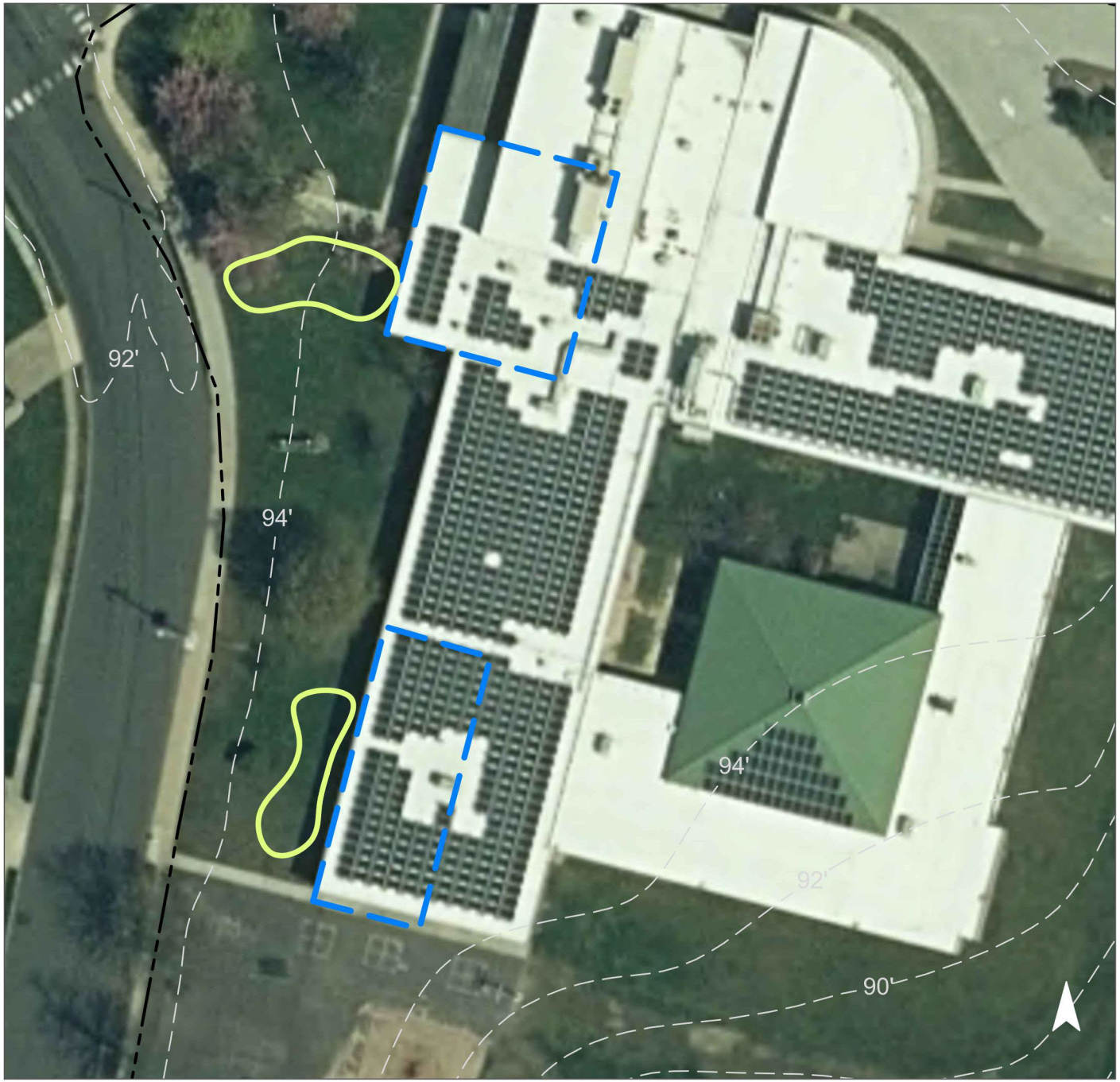
Block and Lot: Block 3.23, Lot 15

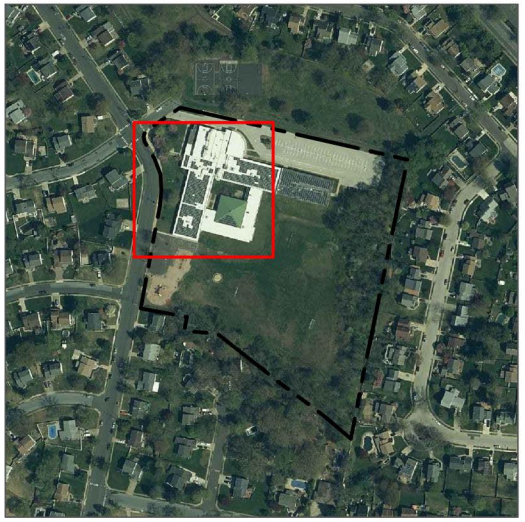
Two rain gardens can be installed west of the building near disconnected downspouts to capture, treat, and infiltrate rooftop runoff. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
33	136,410	6.6	68.9	626.3	0.106	3.74

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention systems	0.196	33	14,680	0.55	1,885	$9,425

GREEN INFRASTRUCTURE RECOMMENDATIONS





J. Harold Van Zant Elementary School

- bioretention system
- drainage area
- property line
- 2015 Aerial: NJOIT, OGIS

0 25' 50'

EVESHAM TOWNSHIP PUBLIC WORKS DEPARTMENT

Subwatershed: Rancocas Creek Southwest Branch

Site Area: 661,375 sq. ft.

Address: 501 Evesboro Medford Road
Marlton, NJ 08053

Block and Lot: Block 14, Lots 5, 5.03

Cisterns can be installed at the corners of the building to capture rooftop runoff. Water collected in the cisterns can be used to wash vehicles or water lawn areas. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
71	471,550	22.7	238.2	2,165.1	0.367	12.93

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (gal)	Estimated Cost
Rainwater harvesting	0.188	31	6,000	0.23	6,000 (gal)	$12,000

GREEN INFRASTRUCTURE RECOMMENDATIONS

Evesham Township
Public Works Department

- rainwater harvesting
- drainage area
- property line
- 2015 Aerial: NJOIT, OGIS

0 15' 30'

HELEN L. BEELER ELEMENTARY SCHOOL

Subwatershed: Rancocas Creek Southwest Branch

Site Area: 654,230 sq. ft.

Address: 60 Caldwell Avenue Marlton, NJ 08053

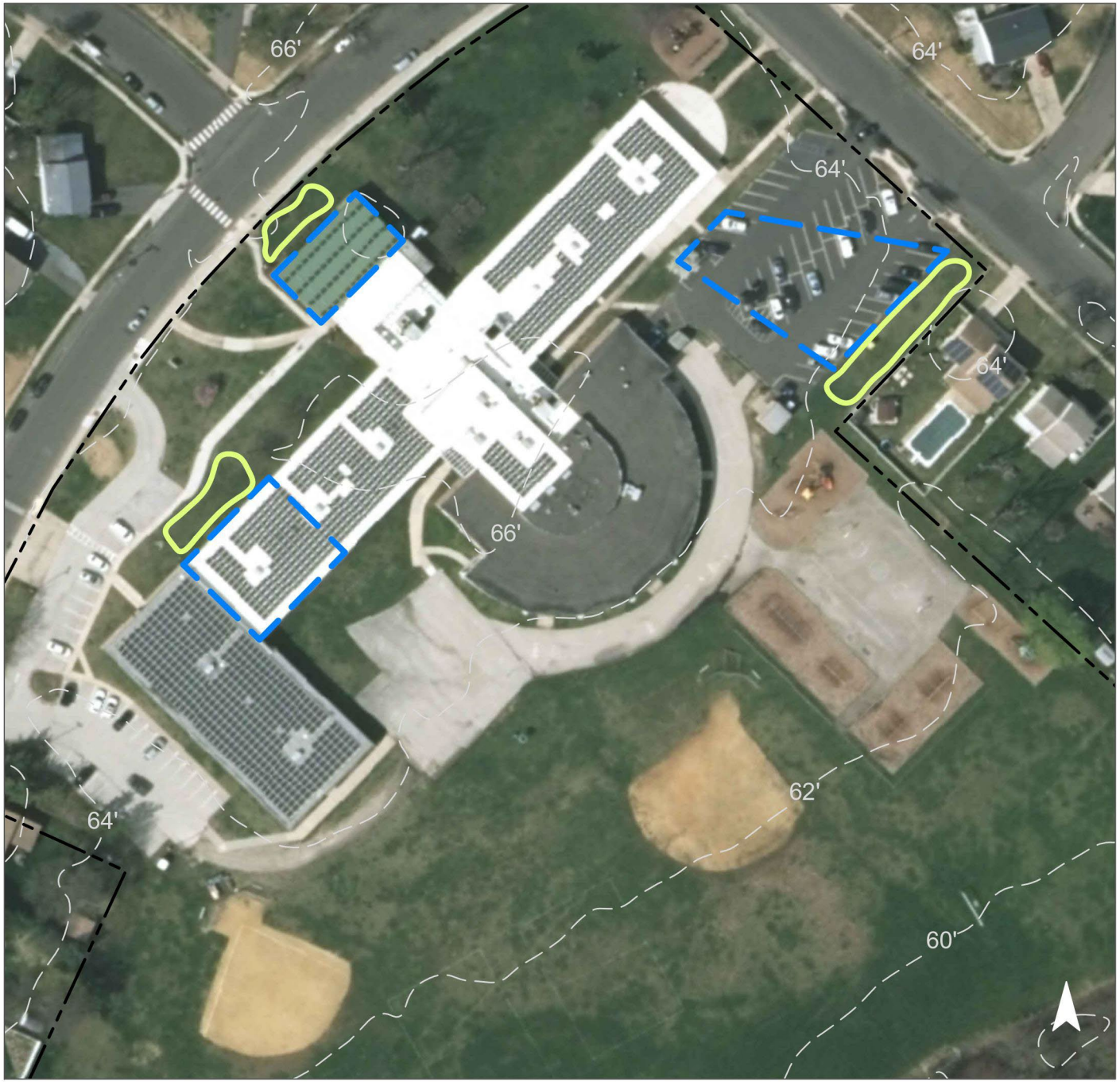
Block and Lot: Block 28, Lots 8, 8.01

A rain garden can be installed adjacent to the parking lot to capture, treat, and infiltrate runoff from the parking lot. Two more rain gardens can be installed at the front of the building to collect water from downspouts. A preliminary soil assessment suggests that more soil testing would be required before determining the soil's suitability for green infrastructure.

Impervious Cover		Existing Loads from Impervious Cover (lbs/yr)			Runoff Volume from Impervious Cover (Mgal)	
%	sq. ft.	TP	TN	TSS	For the 1.25" Water Quality Storm	For an Annual Rainfall of 44"
28	184,275	8.9	93.1	846.1	0.144	5.05

Recommended Green Infrastructure Practices	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Maximum Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cu. ft./second)	Estimated Size (sq. ft.)	Estimated Cost
Bioretention systems	0.475	79	35,520	1.33	4,555	$22,775

GREEN INFRASTRUCTURE RECOMMENDATIONS



Helen L. Beeler Elementary School

- bioretention system
- drainage area
- property line
- 2015 Aerial: NJOIT, OGIS

0 50' 100'

Summary of Existing Conditions

	Subwatershed/Site Name/Total Site Info/GI Practice	Area (ac)	Area (SF)	Block	Lot	I.C. %	I.C. Area (ac)	I.C. Area (SF)	Existing Annual Loads (Commercial)			Runoff Volumes from I.C.		Runoff Volumes from I.C.	
									TP (lb/yr)	TN (lb/yr)	TSS (lb/yr)	Water Quality Storm (1.25" over 2-hours) (cu.ft.)	Annual (cu.ft.)	Water Quality Storm (1.25" over 2-hours) (Mgal)	Annual (Mgal)
	Barton Run Sites	**31.19**	**1,358,705**				**8.42**	**366,960**	**17.7**	**185.3**	**1684.8**	**38,225**	**1,345,520**	**0.286**	**10.06**
1	**Marlton Middle School Total Site Info**	**31.19**	**1,358,705**	**39**	**1.02**	**27.0081**	**8.42**	**366,960**	**17.7**	**185.3**	**1684.8**	**38,225**	**1,345,520**	**0.286**	**10.06**
	Pennsauken Creek North Branch Sites	**2.67**	**116,345**				**1.31**	**57,220**	**2.8**	**28.9**	**262.7**	**5,960**	**209,807**	**0.045**	**1.57**
2	**Congregation Beth Tikvah Total Site Info**	**2.67**	**116,345**	**9**	**9**	**49.1813**	**1.31**	**57,220**	**2.8**	**28.9**	**262.7**	**5,960**	**209,807**	**0.045**	**1.57**
	Pennsauken Creek South Branch Sites	**9.50**	**413,820**				**3.13**	**136,410**	**6.6**	**68.9**	**626.3**	**14,209**	**500,170**	**0.106**	**3.74**
3	**J. Harold Van Zant Elementary School Total Site Info**	**9.50**	**413,820**	**3.23**	**15**	**32.9636**	**3.13**	**136,410**	**6.6**	**68.9**	**626.3**	**14,209**	**500,170**	**0.106**	**3.74**
	Rancocas Creek Southwest Branch Sites	**30.20**	**1,315,605**				**15.06**	**655,825**	**31.6**	**331.2**	**3011.1**	**68,315**	**2,404,692**	**0.511**	**17.99**
4	**Evesham Twp Public Works Department Total Site Info**	**15.18**	**661,375**	**14**	**5, 5.03**	**71.2984**	**10.83**	**471,550**	**22.7**	**238.2**	**2165.1**	**49,120**	**1,729,017**	**0.367**	**12.93**
5	**Helen L. Beeler Elementary School Total Site Info**	**15.02**	**654,230**	**28.09**	**8, 8.01**	**28.1667**	**4.23**	**184,275**	**8.9**	**93.1**	**846.1**	**19,195**	**675,675**	**0.144**	**5.05**

Summary of Proposed Green Infrastructure Practices

	Subwatershed/Site Name/Total Site Info/GI Practice	Potential Management Area Area (SF)	Potential Management Area Area (ac)	Recharge Potential (Mgal/yr)	TSS Removal Potential (lbs/yr)	Max Volume Reduction Potential (gal/storm)	Peak Discharge Reduction Potential (cfs)	Size of BMP	Unit Cost ($/unit)	Unit	Total Cost ($)	I.C. Treated %
	Barton Run Sites	**15,700**	**0.36**	**0.409**	**68**	**30,600**	**1.15**				**$55,625**	**4%**
1	**Marlton Middle School**											
	Bioretention system	4,500	0.10	0.117	20	8,770	0.33	1,125	$5	SF	$5,625	1%
	Pervious pavement	11,200	0.26	0.292	49	21,830	0.82	2,000	$25	SF	$50,000	3%
	Total Site Info	**15,700**	**0.36**	**0.409**	**68**	**30,600**	**1.15**				**$55,625**	**4%**
	Pennsauken Creek North Branch Sites	**2,695**	**0.06**	**0.070**	**12**	**5,250**	**0.20**				**$3,375**	**5%**
2	**Congregation Beth Tikvah**											
	Bioretention system	2,695	0.06	0.070	12	5,250	0.20	675	$5	SF	$3,375	5%
	Total Site Info	**2,695**	**0.06**	**0.070**	**12**	**5,250**	**0.20**				**$3,375**	**5%**
	Pennsauken Creek South Branch Sites	**7,530**	**0.17**	**0.196**	**33**	**14,680**	**0.55**				**$9,425**	**6%**
3	**J. Harold Van Zant Elementary School**											
	Bioretention systems	7,530	0.17	0.196	33	14,680	0.55	1,885	$5	SF	$9,425	6%
	Total Site Info	**7,530**	**0.17**	**0.196**	**33**	**14,680**	**0.55**				**$9,425**	**6%**
	Rancocas Creek Southwest Branch Sites	**25,425**	**0.58**	**0.662**	**111**	**41,520**	**1.56**				**$34,775**	**4%**
4	**Evesham Twp Public Works Department**											
	Rainwater harvesting	7,200	0.17	0.188	31	6,000	0.23	6,000	$2	gal	$12,000	2%
	Total Site Info	**7,200**	**0.17**	**0.188**	**31**	**6,000**	**0.23**				**$12,000**	**2%**
5	**Helen L. Beeler Elementary School**											
	Bioretention systems	18,225	0.42	0.475	79	35,520	1.33	4,555	5	SF	$22,775	10%
	Total Site Info	**18,225**	**0.42**	**0.475**	**79**	**35,520**	**1.33**				**$22,775**	**10%**